CLAIMS

What is claimed is:

1. A pharmaceutical composition comprising:

a diblock copolymer of poly(ethylene oxide) and poly(butyl (alkyl)acrylate-co-(alkyl)acrylic acid); and at least one biologically active agent.

2. The polymer of claim 1 wherein said poly(ethylene oxide) segment has a molecular weight in the range of about 200-80,000 Da.

3. The polymer of claim 1 wherein said poly(butyl (alkyl)acrylate-co-(alkyl)acrylic acid) segment has a molecular weight in the range of about 200-80,000 Da.

4. The polymer of claim 1 wherein said alkyl is an alkyl chain having from 0 to about 10 carbon atoms.

5. The polymer of claim 1 wherein said butyl portion of the butyl (alkyl)acrylate is a linear or branched chain.

6. The polymer of claim 1 wherein said butyl (alkyl)acrylate : (alkyl)acrylic acid is in a molar ratio in the range of about 5:95 to 95:5.

7. The pharmaceutical composition of claim 1 wherein said diblock polymer is poly(ethylene oxide)-block-poly(n-butyl acrylate-co-methacrylic acid) having an n-butyl acrylate: methacrylic acid molar ratio of about 50:50.

8. The pharmaceutical composition of claim 1 in the form of supramolecular assemblies or micelles.

9. The pharmaceutical composition of claim 8 wherein said supramolecular assemblies or micelles are in a size range of about 5 to 1000 nanometers.

10. The pharmaceutical composition of claim 8 wherein said supramolecular

assemblies associate or dissociate reversibly in response to environmental pH changes.

11. The pharmaceutical composition of claim 1 wherein release rate of said biologically active agent increases with increase in pH.

12. The pharmaceutical composition of claim 8 wherein the biologically active agent is a hydrophobic drug incorporated in said supramolecular assemblies by physical or chemical methods.

13. The pharmaceutical composition of claim 12 wherein the hydrophobic drug is fenofibrate.

14. The pharmaceutical composition of claim 8 wherein the biologically active agent is a cation or polycation.

15. The pharmaceutical composition of claim 14 wherein said polycation is a peptide or protein bearing cationic residues.

16. The pharmaceutical composition of claim 14 wherein the cation or polycation interacts electrostatically with said (alkyl)acrylic acid units.

17. The pharmaceutical composition of claim 14 wherein the cation is verapamil hydrochloride.

18. The pharmaceutical composition of claim 8 wherein the biologically active agent forms metal coordination complexes with said (alkyl)acrylic acid units.

19. The pharmaceutical composition of claim 18 wherein the biologically active agent is cisplatin.

20. The pharmaceutical composition of claim 18 wherein the biologically active agent is carboplatin.

21. The pharmaceutical composition of claim 12 wherein incorporation of a hydrophobic drug in the supramolecular assemblies enhances the bioavailability of the hydrophobic drug upon oral administration.

22. The pharmaceutical composition of claim 8 which is administered by oral, intravenous, intra-arterial, subcutaneous, intramuscular, intraperitoneal, rectal, vaginal or topical route.

23. The pharmaceutical composition of claim 8 having a targeting ligand on a surface thereof.